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ABSTRACT

Carnegie Corporation of New York and other funders are undertaking a reform initiative, "Teachers for a New Era," to stimulate construction of excellent teacher education programs at selected colleges and universities. Success will require radical change in allocation of resources, academic organization, criteria for evaluating participating faculty, internal accountability measures, and relationships with practicing schools. The initiative is organized by three design principles. First, teacher education programs should be guided by respect for evidence, including attention to student learning gains accomplished under the tutelage of teachers who are program graduates. Second, arts and sciences faculty should be fully engaged in the education of prospective teachers, especially in the areas of subject matter understanding and general and liberal education. Finally, education should be understood as an academically taught clinical practice profession, requiring close cooperation between colleges of education and actual practicing schools; master teachers as clinical faculty in the college of education; and residencies for beginning teachers during a 2-year induction period. Participation in the initiative will be by invitation. A national advisory panel will advise the funders on institutions to be selected. Institutions that agree will receive up to $5 million for 5 years, to be matched by equal funds by the institution. At least six awards will be made. (Contains 12 references.) (SM)

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Teachers for a New Era:

A National Initiative to Improve the Quality of Teaching

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Carnegie Corporation of New York was created by Andrew Carnegie in 1911 to promote "the advancement and diffusion of knowledge and understanding." Under Carnegie's will, grants must benefit the people of the United States, although up to 7.4 percent of the funds may be used for the same purpose in countries that are or have been members of the British Commonwealth, with a current emphasis on sub-Saharan Africa. As a grantmaking foundation, the Corporation seeks to carry out Carnegie's vision of philanthropy, which he said should aim "to do real and permanent good in this world." Currently, the foundation focuses its work in four program areas: Education, International Peace and Security, International Development and Strengthening U.S. Democracy.

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executive summary

Recent research based on thousands of pupil records in many different cities and states establishes beyond doubt that the quality of the teacher is the most important cause of student achievement. More than ever, the nation needs assurance that colleges and universities are educating prospective teachers of the highest quality possible. The knowledge base for teacher education is better understood today than in 1983, when an alarm was sounded by the Department of Education's report, *A Nation at Risk*. During the past generation, agreement among teacher educators has been growing on essential principles for excellence in the standard route by which students in higher education come to earn credentials enabling them to begin careers as teachers. A well supported, widely adopted, fully integrated approach, however, has been elusive.

Carnegie Corporation of New York and other funders are now undertaking an ambitious reform initiative, *Teachers for a New Era*, to stimulate construction of excellent teacher education programs at selected colleges and universities. Success will require radical change in allocation of resources, academic organization, criteria for evaluating participating faculty, internal accountability measures, and relationships with practicing schools. At the conclusion of the project, the selected institutions should be regarded by the nation as administering the best programs possible for the standard primary route to employment as a beginning professional teacher.

Teachers for a New Era is organized by three design principles described in detail in an announcement and prospectus. First, a teacher education program should be guided by a respect for evidence, including attention to pupil learning gains accomplished under the tutelage of teachers who are graduates of the program. Second, faculty in the disciplines of the arts and sciences should be fully engaged in the education of prospective teachers, especially in the areas of subject matter understanding and general and liberal education. Finally, education should be understood as an academically taught clinical practice profession, requiring close cooperation between colleges of education and actual practicing schools; master teachers as clinical faculty in the college of education; and residencies for beginning teachers during a two-year period of induction.

Participation in *Teachers for a New Era* will be by invitation. A national advisory panel will advise the funders, including Carnegie Corporation of New York, on institutions to be selected. Institutions that agree to the conditions specified in the prospectus will be awarded up to $5 million for a period of five years, to be matched by equal funds provided by the institution. At least six awards will be made, staggered over three years, beginning with two awards in the 2002 fiscal year. An independent research organization will assist the national advisory panel by providing descriptive and evaluative analysis as necessary.

Part One: Announcement

I. Rationale

New and convincing evidence that teaching is more important for schoolchildren than any other condition has been stunning in its clarity and exciting in its implications. Education leaders have always known that good teaching brings about learning by pupils. Now, recent research based upon thousands of pupil records in many different cities and states establishes beyond doubt that the quality of the teacher is the most important cause of pupil achievement. Excellent teachers can bring about remarkable increases in student learning even in the face of severe economic or social disadvantage. Such new knowledge puts teacher education squarely in the focus of efforts to improve the intellectual capacity of schoolchildren in the United States. More than ever, the nation needs assurance that colleges and universities are educating prospective teachers of the highest quality possible.

Although many tools for significant improvement of teacher education are at hand, they have not yet been effectively assembled in widely used productive models. The knowledge base for teacher education is better understood today than in 1983, when an alarm was sounded through release by the Department of Education of its famous report, *A Nation at Risk*. During the past generation, agreement among teacher educators has been growing on essential principles for excellence in the standard route by which students in higher education come to earn credentials enabling them to begin careers as teachers. There is a remarkable convergence of design ideas among reform groups and professional associations.

Many essential elements have been put in place in a number of colleges and universities. These include reliance upon courses and majors in the arts and sciences, close coordination with practicing schools, and a focus on pupil learning accomplished under teacher tutelage. Where new design ideas have been applied they have been knit together with core elements of a good teacher education program in basic areas such as curriculum, assessment, developmental psychology, instructional methods, and classroom management. A well supported, widely adopted, fully integrated approach, however, has been elusive. What is needed is a thoroughgoing reform engaging institutions of higher education in all of the academic programs that contribute to the education of prospective teachers and achieving priority support and attention by institutional administrative leadership. This kind of reform will reinforce a growing coherent energizing vision of teaching as a vital profession, a vision that induces high academic standards.

II. General Description

Carnegie Corporation of New York and other foundations and funding sources now announce an ambitious reform initiative, *Teachers for a New Era*, to stim-

ulate construction of excellent teacher education programs at selected colleges and universities. We seek a catalytic revision of teacher education led by colleges and universities committed to a new future for teaching and learning in the nation's schools.

Through this initiative, *Teachers for a New Era*, we expect outcomes implementing radical change. Among these will be different allocation of resources; academic organization; criteria for evaluating participating faculty; internal accountability measures; and relationships with practicing schools. The purpose of *Teachers for a New Era* is to assist cooperating institutions in constructing and securing exemplary programs of education for prospective teachers. At the conclusion of the project, each of these institutions should be regarded by the nation as the locus for one of the best programs possible for the standard primary route to employment as a beginning professional teacher. The benchmarks of success for this effort will be evident in the characteristics of the teachers who graduate from these programs. They will be competent, caring and qualified, will be actively sought by school districts and schools, and will be known for the learning gains made by their pupils. The quality of the teachers prepared is expected to encourage the crafting of supportive public policy in states and school districts and emulation of the programs by other institutions.

Teachers for a New Era is organized by three broad design principles, as described in detail in the attached prospectus. First, a teacher education program should be guided by a respect for evidence. A culture of research, inquiry, and data analysis should permeate the program. Among the features of this culture will be attention to pupil learning gains accomplished under the tutelage of teachers who are graduates of the program. Thus, pupil learning will become one measure of the effectiveness of a teacher education program. Second, faculty in the disciplines of the arts and sciences must be fully engaged in the education of prospective teachers, especially in the areas of subject matter understanding and general and liberal education. Finally, education should be understood as an academically taught clinical practice profession. That means that there will be close cooperation between colleges of education and actual practicing schools; master teachers in the schools will hold appropriate appointments as clinical faculty in the college of education; and graduates of teacher education programs will serve a residency under supervision of a mentor during a two-year period of induction into the teaching profession.

Participation in *Teachers for a New Era* will be by invitation. A panel of experts will advise funding agencies on institutions to be selected. Colleges and universities are expected to be invitees, but the initiative leaves open the possibility that special groupings, such as a consortium of smaller institutions, or a state system of higher education, or an entire state, might qualify under special conditions. Included in the full array selected during the course of this initiative

will be differing kinds of institutions, representing the variety of teacher education programs in the nation. Institutions that agree to the conditions specified in this announcement and prospectus will be awarded up to $5 million for a period of five years, to be matched by equal funds provided by the institution. The Corporation expects to make six awards, staggered over three years, beginning with two awards in Spring, 2002. Other foundations and funding sources will also participate in this historic project and will thus provide awards to other institutions, expanding the number of participating institutions beyond six.

Teachers for a New Era is an initiative prepared in the belief that persuasive construction of high quality teacher education curricula will significantly improve the quality of teachers. In asserting that a well-developed program will address the design principles and issues described in the prospectus, it seeks to consolidate a consensus for the professional basis of teaching. It aims to acknowledge the rapidly changing conditions that support the education of prospective teachers and thus to look forward, anticipating trends and building the profession for the future. It will strengthen public confidence that academic institutions are exercising responsibility for quality education of prospective teachers.

III. Support by Foundations and Other Funding Sources

In designing *Teachers for a New Era,* Carnegie Corporation of New York has reviewed research and consulted broadly with grant making colleagues, experts in teacher education, and policy analysts. In the course of these discussions, other foundations have joined this initiative and committed resources. Therefore, *Teachers for a New Era* will be financed by a coalition of funding agencies. Carnegie Corporation of New York, with its own resources, is committed to making six awards through this initiative. Other foundations or funding sources will provide additional awards and other support.

Because several foundations or funding sources are currently considering participation in this initiative in light of their priorities, commitments, and budgets, a complete listing of funding participants committed to the specific conditions and provisions of *Teachers for a New Era* is not fixed at this time. Carnegie Corporation of New York is acting as coordinator and informant. Where the term "funding agency" is used in this announcement and prospectus, it will refer either to Carnegie Corporation of New York or another foundation or funding source participating in this initiative.

The basic design principles put forward here are not proprietary. They are directed at the public interest and can be freely borrowed and modified by others, including legislative bodies and governmental agencies.

IV. Scope

There are many ways by which teachers acquire and sustain skills in teaching. *Teachers for a New Era* is explicitly focused on just one of these: the standard route by which students in higher education come to earn credentials enabling them to begin careers as teachers. This is often called the "preservice" teacher education curriculum. For purposes of this initiative, the conception includes "induction" as part of the standard route. Induction is a system of formal and informal support provided to licensed beginning teachers during their first exposure to full-time professional teaching.

Hardly any teacher education program is a single well-defined entity. Multiple programs, such as special education or early childhood education, as well as many different elementary and secondary education programs, may all be housed together in one large administrative home, but be organized in very different ways to produce specific educational outcomes. Because local forms of organization differ, it is customary, as in this initiative, to refer to them conveniently with a single term: the teacher education program. The basic design principles put forward in this prospectus, however, are meant to apply fully, as appropriate, to each of the many specialty subprograms serving the education of prospective teachers.

Two well-known forms of teacher education are not included in this request for proposals. The first is "alternative" certification, which provides specialized curricula for college graduates who enter the profession of teaching directly without having participated in the standard educational curriculum normally required for licensure. The second consists of professional development courses and activities for practicing teachers who need to sustain and render current their skills as teachers, often called the "inservice" teacher education curriculum. Both of these forms of teacher education are important and are subjects of philanthropic support through other venues. Neither, however, is a direct subject of *Teachers for a New Era*.

V. Funding Strategy

A. Base Awards

A small number of large awards will be made to selected institutions. The awards will be for an initial period of three years, with a contingent renewal for one additional two-year period. Thus, award funds could extend for program design and implementation over a period of five years. Each award will be for an amount up to one million dollars per year, to be matched on a 1:1 basis by the receiving institution. Matching funds may come from reallocations internal to the higher education institution's base budget or from newly raised private or public funds. "In-kind" resources, such as supplies, space, or temporarily apportioned personnel time are, of course, encouraged, but may not be used to meet the matching requirement.

Renewal awards will be made contingent primarily upon two satisfactory outcomes: (1) attaining 24-month milestone goals as described in the awardee's initial proposal; and (2) submission of a satisfactory plan for matching funds, describing commitments obtained and planned. At least thirty percent of all matching funds must be pledged to endowment for support of the new program. Thus, in the case of a maximum award, ten million dollars will be invested in the institution for purposes of design and implementation; at least 1.5 million dollars will consist of permanent endowment.

Invited applicants should presume that they would meet the contingency for renewal. Therefore, an invited proposal will be written as a five-year comprehensive effort with full engagement from its initiation. The institution's design will assume progressive and systematic implementation throughout five years.

B. Partner Support Awards

At the beginning of the third year of support up to $250,000 will be added to each institution's award budget to assist in the support of partners. Upon renewal, up to an additional $500,000 will be added for this purpose. These funds are in addition to the base award. The awardee institution will be responsible for disbursing these funds to partner institutions. Partners may be school districts; teacher education programs at other institutions that agree to adopt the basic design principles being implemented by the awardee institution; or other institutions selected by the awardee institution in consultation with the funding agency. Each award by an awardee institution to support a partner may not be less than $75,000, nor more than $200,000, and only one may be awarded to any particular partner institution. Funding strategies for partner support awards will be developed by the awardee institutions and implemented in consultation with the funding agency.

VI. Selection Procedures and Criteria

A panel of advisers will recommend to the funding agencies a set of institutions to be invited to submit proposals for funding under terms of the *Teachers for a New Era* initiative. The members of the panel will use their best judgment to propose institutions for selection and ultimately to recommend specific institutions to be invited. The panel will be assisted in its work by a research organization under contract to the funding agencies, which will supply descriptive information, relevant data, and analytical reports. No particular extant program is a target for endorsement or exclusion in this initiative. The panel will consider the universe of all institutions that harbor teacher education programs. Programs limited to entry only by graduate students as well as those open to beginning undergraduates are equally eligible. Criteria for selection will include the following:

- The quality of the teacher education program currently in place at the institution

- The capacity of the institution to serve as an exemplar or model for other institutions

- The impact of the institution on the enterprise of teacher education

- The local or regional public policy environment that most directly affects the institution

- The capacity of the institution to engage in leadership activities to persuade other institutions to adopt successful features of the design principles

- The quality of the faculty and administration

Other criteria may emerge during the analysis that leads to selection of an institution invited to apply, but those listed here will be primary and dominant.

Part Two: Prospectus

I. Design Principles

Institutions invited to participate in *Teachers for a New Era* will be asked to submit a proposal in conformity with this design prospectus. The proposal will set forth how the institution will address the design principles described here, and how it will engage the specific issues enumerated in section II, below. The design principles and engagement issues arise from a process of induction. They have been shown in most cases by credible demonstration to contribute to increases in teaching effectiveness. Where the empirical evidence is weak, they represent consensus views of leading researchers and practitioners, based upon experience and reason, about a secure basis for building teaching effectiveness.

The principles and issues fit together comfortably and are not contradictory. In that sense, they are coherent. Indeed, their consistency is intended to convey a core understanding of normative best practice. They suggest a theory of action, as that phrase is commonly understood. It is that an inclusive academic culture of research, rigorous standards and respect for evidence provides for a self-correcting and continually improving teacher education program. Obviously, the word theory is not used here as the exacting canons of science define it. There is no fully constructed system. Instead, the coherence of the principles and issues, taken together, holds promise for perceiving elements of a general model that can readily be disseminated nationally and adopted generally by teacher education programs anywhere. The principles and issues provide considerable latitude for local circumstances, imaginative approaches, and the special strengths brought to the enterprise by any specific institution of higher education.

A. Decisions Driven by Evidence

A teacher education program should be evaluated against the most credible evidence of best practice. Although the qualitative, quantitative, and experimental research base for teacher education can be characterized as modest, it must nonetheless intelligently inform program design. For each key element, responsible faculty should ask, what evidence might be brought to bear upon a decision to include or exclude this element? Adjustments to the program should be regularly anticipated based upon reviews that confirm promising new findings.

1. Drawing upon research

An exemplary teacher education program should begin with a persuasive scholarly discussion of what constitutes excellence in teaching. It should be based upon credible evidence, which includes sound research as well as compelling experience. Flowing from this research-based treatment, a college or university based program of instruction can arise from consideration of the means by which teaching effectiveness can be increased. Of course, not every design

decision can be justified by a specific research finding. No experiment is perfect. The best experiments point to new experiments that need to be done. Trying to rule out alternative explanations requires mental effort of the most demanding kind. Working continually with evidence and evaluations of research, however, is an efficient means for clarifying our observations and building our confidence in practice. It builds a culture that justifies ongoing redesign of work as the program learns from the very steps it takes to improve. Thus, research not only precedes and supports experimentation. It accompanies and reinforces it. The teacher education program should be informed by a broad-ranging understanding of ongoing local research practice, and what can be trusted from published results in the research literature.

2. The role of pupil learning

A variety of teacher characteristics can be considered, on the basis of credible evidence, to constitute criteria for measuring success as a teacher. In every case, however, an essential criterion must be evidence for learning accomplished by pupils entrusted to the care of the teacher. Invited proposals will be considered only if they contain plans to evaluate the ongoing effectiveness of the teacher education program based in part on evidence of pupil learning that has occurred under the tutelage of teachers who are graduates of the program. This is understandably difficult to arrange, and few teacher education programs currently make good use of it.

Furthermore, if pupil learning is required as a measure of the effectiveness of teacher education, one has to allow enough time for a teacher candidate to complete a program and to practice for several years as a professional teacher. Therefore, it is not expected that proposals in this competition will be able to demonstrate the effectiveness of their proposed design using measures of pupil learning during the period of grant support. It is required, however, that a successful proposal contain a method by which such measures will necessarily in due course assume their proper role in validating the design. It is expected that data will have begun to be collected before the period of grant support has terminated. In addition to this long-term consideration of the role of pupil learning, attention to the assessment and measurement of pupil learning will be an integral element of the teacher education program, especially gaining attention during the student teaching component.

B. Engagement with the Arts and Sciences

Faculty appointed within the disciplines of the arts and sciences must be fully and functionally engaged in the education of prospective teachers. Proposals must address the matter forthrightly, because there are few successful precedents of organizational structures to facilitate this process. The means by which this may be accomplished will reflect the particular strengths and traditions of the applicant institution.

Each proposal must, for example, describe how teacher candidates will encounter and surmount subject-matter understanding and general and liberal education, the domains of which lie principally within the core competencies of faculty in the arts and sciences. When conscientiously addressed in light of the requirements necessary to enfranchise a professional teacher, it is likely that fundamental questions will arise about the adequacy of design of academic major programs in the arts and sciences, or about the program of general and liberal education for all students. Such questions are important and cannot be ignored. At the same time, their complexity and difficulty must not block the development of a solution that is necessary for the education of teachers. Therefore, special solutions may be required for teacher candidates that may have the effect of requiring a particular kind of rigor for these students beyond that which is normally required for others.

Some faculty in the arts and sciences will be expected to participate in the supervision of teacher candidates in clinical settings, as the candidates learn to teach academic disciplines to pupils in schools. Further, faculty in the arts and sciences will be expected to join with their colleagues in professional education to address the engagement issues described in Part II of this prospectus. In short, significant effort on the part of arts and sciences faculty will be required to sustain an excellent program of teacher education. Each proposal must address how deans, department chairs, and colleagues in the disciplines will support this effort.

1. Subject matter understanding

It is essential for every teacher candidate to possess an academic major in a discipline of the arts and sciences, but even this may be insufficient to acquire the content knowledge necessary for excellent teaching. An evidence driven program can ask, for example, what kind of synthetic understanding of a discipline a teacher should have in order to take advantage of the kind of simple questions raised by ordinary pupils in schools. In addition to specific content mastery, does the teacher candidate possess integrative knowledge of the nature of the discipline, its premises, modes of inquiry, and limits of understanding?

2. General and liberal education

Teachers should be perceived as representatives of a profession. Their professional authority will rest in a significant extent upon their ability to demonstrate that they are themselves educated persons. Therefore, teacher candidates must be expected to know more in the way of subject matter than just what they are charged with teaching. Teacher candidates must command general education, liberal education, and the liberal arts. Goals in these areas should be clearly specified, perhaps in greater detail than for other postsecondary students, and their competencies should be assessed.

C. Teaching as an Academically Taught Clinical Practice Profession

Successful proposals will include plans to engage faculty in the disciplines of education functionally in the teacher education program. The means by which this may be accomplished will reflect the particular strengths and traditions of the applicant institution. Each proposal must, however, address the following concepts, whose domains lie principally within the core competencies of faculty in education. *Teachers for a New Era* assumes that pedagogy lies at the heart of education as an academic enterprise. Furthermore, it assumes that a well-designed teacher education program relies upon sound core principles in the teaching of pedagogy. It adds to this sound core the implications of conceptualizing teaching as a clinical practice profession and requires that these become an integral part of the program design.

Excellent teaching is a clinical skill. It occurs principally with clients (pupils) in clinics (classrooms or laboratories) arranged to enhance its efficacy. Just as for any clinical practice profession, there is a knowledge base for teaching that is taught and learned in traditional academic settings. This usually includes, for example, historical, philosophical, sociological, and economic foundations of education. In addition to academic study, clinical practice in schools takes place in complex public environments and entails interaction with pupils, colleagues, administrators, families and communities. Clinical education is developmental in its conception, and is designed to teach clinicians not to act upon the client, but to assist the client's growth and development. Good clinical practice keeps the client's interests as a central focus at all times. Exemplary teacher education provides for clinical education in a clinical setting.

1. Pedagogy

Teacher education will equip professional teachers to assess what pupils already know and can do as the point of departure for new learning. Teacher candidates should know how to develop a rigorous curriculum that engages pupils, builds on their prior knowledge, and fosters deep understanding of content. Teacher candidates should demonstrate ability to collaborate with colleagues and families to ensure coherence and ongoing success with pupils. Teacher candidates will know how to observe and assess children's learning continuously in order to plan and implement responsive instruction. Teacher candidates will know how children develop into adults, physically and psychologically. A professional teacher's repertoire of teaching strategies will widen over time so that children with a range of learning styles, abilities, and cultural backgrounds will have effective access to schooling.

A proposal for *Teachers for a New Era* will include some means of measuring the learning of pedagogy accomplished by teacher candidates as a result of instruction provided within the teacher education program.

2. Schools as clinics

An exemplary teacher education program will develop close functional relationships with a number of practicing schools. Superintendents, principals, and experienced teachers will have an appropriate role in advising and shaping the education of teacher candidates. Faculty from the university or college will be actively involved in arranging, supervising, and teaching teacher candidates in the clinical setting of the classrooms of the practicing schools. During periods of student teaching, teacher candidates will assess pupil learning that occurs under their tutelage.

3. Teachers on faculty appointment

Outstanding experienced teachers are skilled clinicians. They can contribute to the education of prospective teachers in formal ways in the higher education setting. Through some appropriate process of selection, experienced excellent teachers should be recognized as faculty colleagues along with other teacher educators in higher education. Some form of qualified faculty appointment may recognize their status, e.g., clinical faculty, professor of practice, or adjunct professor.

4. Residency (induction)

The teacher education program will bring the teacher candidate to a point where the candidate receives an academic degree and a state sanctioned license to teach in a school. That has been the traditional endpoint for teacher education programs. An exemplary teacher education program, however, will consider the teacher candidate's first two years of full-time regular service in the teaching profession as a residency period requiring mentorship and supervision. During this induction period, faculty from the higher education institution, inclusive of arts and sciences faculty, will confer with the teacher on a regular basis, arrange for observation of the teacher's clinical practice, and provide guidance to improve practice. Successful completion of the formally structured induction program will be occasion for the teacher candidate to receive a final document acknowledging full completion of the program and recognition as a professional teacher.

The majority of teacher education programs in the United States educate candidates who become teachers within a nearby region, or within the same state as the teacher education program is located. There are highly regarded programs, however, the majority of whose candidates seek and find initial teaching positions throughout the United States, and well beyond the borders of the state sheltering the teacher education program. Even those programs most of whose graduates work nearby also produce some graduates whose first position is in a setting remote from the locus of the program. Therefore, in designing a residency component, proposal writers will need to consider mechanisms for supervision during induction in locations far from the home of the teacher education faculty. This could include, for example, arrangements for supervision to be con-

ducted at least in part by a corresponding institution near to the practicing teacher. Other solutions are possible. Distance learning technologies, structured email accounts, interactive software programs, special courses designed for the summer following the first year of teaching, and traveling faculty monitors are representative ideas that could be employed. Institutions are encouraged to seek designs for residency that provide capable regular clinical supervision, coaching, and assistance, while taking advantage of the special strengths and circumstances of the teacher education program.

5. Preparation of candidates for professional growth

Professional growth begins in the earliest stages of a teacher education program with the cultivation of communities of colleagues sharing professional interests in teaching and in the intellectual exploration of subject matter domains. Teacher candidates should be encouraged to participate with peers from whom they can learn informally about professional advances, interesting ideas about subject matter, and how to improve their teaching. They should be taught how to join or construct informal support groups of colleague teachers in the school environments where they will be teaching. When the professional teacher has completed an exemplary teacher education program, the teacher will be well prepared to engage in regular professional development activities to sustain and develop further the skills of clinical practice. This could include such activities as embarking upon activities leading to certification by the National Board for Professional Teaching Standards, or applying for fellowship support for competitive programs of professional renewal, or designing a program for further graduate study, or participating regularly in workshops offered by the school district.

II. Issues to be Addressed Jointly by Faculties in Education and in Arts and Sciences

Section I describes three basic design principles: reliance upon credible evidence; engagement with the arts and sciences; and teaching as an academically taught clinical practice profession. They cut across most elements of teacher education. Some issues should be specifically considered by faculties in education working jointly with faculties in arts and sciences in preparing a proposal for consideration in this competition.

A. Pedagogical Content Knowledge

There is a kind of knowledge essential to teaching that arises not from subject matter understanding alone, nor from pedagogy alone, but requires competence in both for its formation. This pedagogical content knowledge, or subject-specific pedagogy, must be treated as an integral part of an exemplary teacher education program, and it requires the joint effort of faculties in the arts and sciences and in education. A deep understanding of subject matter is necessary, enabling the teacher to develop a rich repertoire of metaphors, sufficient to reach pupils whose range of

experience may be quite different than the teacher's. Fashioning effective metaphors permits the teacher to build a bridge between the knowledge possessed by the teacher and the implicit understandings brought into the learning situation by the pupil. Pedagogical content knowledge is more than the ability to find effective metaphors. It is a breadth, depth and flexibility of understanding in a field that allows a person to teach imaginatively and productively. It recognizes the cognitive world of the potential learner as a fundamental part of an equation for teaching, thus linking the learner to the subject-matter mastery of the teacher.

B. Literacy/Numeracy Skills

Essential requirements for effective citizenship remain the ability to read well, to write clearly, effectively, and in accord with conventional standards of grammar and spelling, and to perform simple arithmetic operations quickly and correctly. Many postsecondary students lack some or all of these skills. Teachers, however, must not only demonstrate mastery of them, but also be prepared to bring about mastery in the pupils they teach. An exemplary program of teacher education will, therefore, have some means to ensure that teacher candidates acquire and demonstrate mastery of literacy/numeracy skills, and that they are prepared to teach them, irrespective of the level at which they will be teaching.

C. Elementary and Middle School Education

A broad consensus exists that teachers preparing to teach at the secondary level ought to possess an academic major in the discipline they intend to teach. There is no similar consensus, however, for the more complex and academically engaging question of what should be the appropriate academic major for a candidate preparing to teach at the elementary level. At present, plausible cases are made for arbitrary selection of any major in the arts and sciences, for a major in developmental psychology, for an interdisciplinary major in the arts and sciences, for a specialized curriculum in pedagogy, or for other possibilities.

The question of the academic concentration for a candidate intending to become an elementary school teacher deserves early attention in the construction of an exemplary program of teacher education. It should be addressed in a rigorous way, with close attention to credible evidence from the research literature, and in intensive discussion with faculty representing disciplines of the arts and sciences. How can elementary teachers learn the core structure of multiple disciplines so they are prepared to teach a wide variety of content knowledge? What is the core structure of disciplines central to an elementary teacher's ability to react to student understanding with agile manipulation of content in ways that make it understandable? How can an elementary teacher develop subject matter under-

standing that goes beyond the ability to recall information from introductory survey courses? How can synthetic understanding of a discipline be helpful to an elementary school teacher?

Similar concerns may also apply to the question of an appropriate academic major for a prospective middle-school teacher and should, therefore, also be directly addressed and resolved.

D. Technology

The basic processes of teaching and learning do not require much more than pupils and teachers. New technologies often appear, however, that can facilitate both teaching and learning, and historically excellent teachers have welcomed them. Knowing how to use facilitative technologies effectively is an essential skill in the teacher's repertoire. Our current era has placed enormous demands upon this requirement, however, because the economy is producing extraordinary new technologies at a very high rate. Potentially effective but unproven technologies exist along with excellent older ones, obsolete ones, and ineffective ones. An exemplary teacher education program will integrate instruction about technology throughout the program. It will be focused upon building the knowledge teachers need to evaluate which technologies have proven effective and how to use these technologies for teaching and for learning.

E. Cultural Considerations in Teaching and Learning

There are today in the United States more adherents of Islam than there are Episcopalians. More than 70 percent of the pupils in the Los Angeles unified school district are immigrants from Latin America, as are more than 50 percent of the pupils in Dodge City, Kansas. In many of the nation's largest cities, some districts are composed by majorities of more than 90 percent of pupils whose parents are Americans with family histories hundreds of years old on this continent and of African descent. In many communities Asian families form an imposing majority, and everywhere a current tide of immigration from throughout the world is affecting the makeup of the nation's classrooms. Given the current and projected future teaching force, the cultural composition of the body of teachers will continue to be very different from the cultural composition of pupils for the foreseeable future. To recognize the implicit understandings of the world brought into the classroom by the learner, teachers need to comprehend basic elements of the cultures in which the pupils live. An exemplary program of teacher education will devote attention to considerations of national culture, representative cultures, and how sensitivity to culture works as an ally to effective teaching. Curriculum materials and teaching strategies must aim at accuracy with respect to what accepted research findings have reported on differing cultural traditions and their effects upon learning.

F. Recruitment of Under-Represented Groups into Teaching

The national need for teachers of high quality is great. In many settings salaries are increasing and working conditions are good. Teacher candidates come from a variety of backgrounds and circumstances. There is an especially pressing need for teacher candidates who represent minority communities, for those who can teach science and mathematics, and for those who can develop the special skills to teach pupils who face unusual challenges to learning. Faculties in the arts and sciences as well as in education should encourage and support postsecondary students who express an interest in teaching as a profession. Talented students should be especially encouraged.

G. Late Deciders in an Undergraduate Program

Many excellent teachers arrive at a decision to adopt the profession late in their undergraduate careers. Furthermore, many teacher candidates begin study at one institution and then transfer to another where they plan to continue. In many cases the point of entry is a two-year community college that provides the teacher candidate with subject matter instruction in key areas, such as mathematics and science. Late deciders and transfer students can pose problems for programs that admit teacher candidates as undergraduate students. An exemplary undergraduate program leading to primary certification will anticipate that some teacher candidates will seek to enter the program after the point that the program considers optimal for the ideal beginning candidate. Late deciders are often very strong candidates who can develop into excellent teachers. Therefore, specific provisions should be developed within the program to ease the entry of candidates who come to the program later than the normally indicated point of admission. Such candidates should not be penalized by undue delay in prospects for graduation, but rather should be given allowance appropriately for coursework already taken or knowledge gained outside the program. Proposal writers should not conceive this option as a form of alternative certification, but rather of late entry by qualified candidates into a program of primary certification.

III. Accountability

A. Project Manager

The project manager for an award from *Teachers for a New Era* must be an officer within the office of the Chief Executive Officer or of the Chief Academic Officer of a college or university maintaining a program of teacher education. The award will not be made to a nested school or college, or to a dean, but only to an officer with administrative authority that extends throughout all academic units of the institution. The project manager will be accountable for implementing the initiative, managing its details, and bringing it to successful completion.

B. Approval by the Governing Board

After selection and submission of a proposal, upon notification by the funding agency of approval for an award, the Chief Executive Officer will be requested to take the proposal to the institution's governing board for its formal approval. Award of a grant under the conditions of *Teachers for a New Era* will be conditional upon approval of the final proposal by the governing board of the institution.

C. Coordinating Council

Proposals prepared for consideration under the conditions of *Teachers for a New Era* will be required to contain provision for a coordinating council. The purpose of the council will be to receive reports on the status of the teacher education redesign initiative, to monitor its ongoing progress, to facilitate its success, to publicize its achievements, and to offer advice. In order to perform these functions, the council will probably need to meet at least quarterly, and should be apprised of budgetary status and curricular developments. The council should be convened by the project manager, and chaired by the Chief Academic Officer. The proposing institution will design the composition and specific charge of the coordinating council. The following representatives, or their equivalents, may be considered appropriate: a school board member; a practicing teacher; a school principal; a superintendent; a representative from a professional association representing teachers; a representative from an appropriate community-based organization; a representative from local business or industry; a member of the State Board of Education; a faculty member from the School of Education; a faculty member from the Arts and Sciences; the Dean of Education, *ex officio*; and the Dean of Arts and Sciences, *ex officio*.

D. Dissemination

Institutions selected for awards under the conditions of *Teachers for a New Era* will be national exemplars of best practice in the field of teacher education. This imposes a responsibility for dissemination of lessons learned, successful innovations, and difficulties encountered. The funding agencies will undertake to bring the grant recipients together at least once annually for a participatory conference for as long as any grants are active. Proposal writers should describe efforts they plan to encourage other institutions to follow their lead. These could include, for example, residencies for teacher educators from other institutions; newsletters; plans for regular presentations at local, state, regional, and national conferences; and invitational conferences to other institutions to visit the grantee institution for discussions of teacher education. The partner support grant funds, which will become available in the third year of the award, will be helpful for this purpose. Proposal writers should also include budgeted amounts from the base grants to promote dissemination of successful design.

IV. Proposal Specifications

A. Format

Proposals may be organized in any form that the writer feels will most effectively present the proposed ideas, subject only to the following constraints. The proposal should consist of a narrative, plus appendices. The total length of the narrative may not exceed 7,500 words, a measure that can be calibrated with most word processing programs. Each page should include a header that contains the name of the institution on whose behalf the proposal is submitted, in addition to the page number. The narrative should specify the current status of the teacher education program, which can be viewed as a baseline from which change will be measured. It should then include sections that address each of the lettered and numbered paragraphs described in section I (Design Principles) and section II (Issues to be Addressed Jointly) of this design prospectus, indicating how and where change is expected as a result of activities sponsored by the award. These may later be used as benchmarks for success. The first appendix should address each of the lettered paragraphs described in section III (Accountability). The second appendix should describe milestone goals that the awardee institution expects to meet by the end of the first 24 months of grant-supported activity. The degree of success in meeting these goals will be one of the criteria used for determining whether to award a renewal grant for an additional two years beyond the first three years of grant-supported activity. Other appendices may be included at the discretion of the writer, for informational purposes.

B. Budget

1. Foundation funds

Although the design initiative is expected to extend over a five-year period, grants will be awarded first for a three-year period, with a contingent renewal possible for an additional two years. A detailed budget is required for the first three years of the proposed grant, and may not exceed $3 million from foundation funds for this period. A general outline of proposed expenditures for the two-year contingent renewal grant should be included as part of the proposal, in the context of an anticipated five-year grant period. Total expenditures from funds supplied by the funding agency may not exceed $5 million over five years. The budget can be presented in narrative form as a summary in a budget appendix, although the specific proposed spending plan for the first three years should be detailed in the standard budget request template supplied by Carnegie Corporation of New York or another funder. Guidelines, including limitations on indirect costs, are provided with the budget request template.

2. Matching funds

It is expected that receipts and secure pledges for $5 million in matching funds will have been secured by the conclusion of an anticipated five-year grant period. At least 30 percent of the matching funds must be pledged to per-

manently endowed accounts. No matching funds are required in advance, and a detailed fundraising strategy is not required until the grantee submits a renewal proposal about 30 months after the start of grant-supported activity. At the time of submission of the renewal proposal, it is expected that substantial matching funds will have been received. The kinds of funds that can be considered as matching funds for purposes of this grant proposal are described in Part One, Announcement, section V (A) of this announcement and prospectus. Carnegie Corporation of New York will provide, upon request, limited assistance and advice to institutions seeking help in raising funds. The commitment to secure matching funds should be signed by the institution's chief executive officer and submitted with the initial three-year grant proposal. At the time of submission of the renewal proposal, a separate budget appendix will be required containing a brief narrative description of plans for the use of the matching funds, including the apportionment for endowment purposes.

C. External Evaluation

Each proposal must contain a provision, financed by grant-provided funds, for an evaluation of the conduct and success of the program. The evaluation should be conducted by an agency external to the teacher education program and contain provision both for formative evaluation and summative evaluation. The formative evaluation should begin with the initiation of grant-supported activity, providing for continuous improvement of the design initiatives as experience is gained from their implementation. The summative evaluation can begin before the cessation of grant-supported activity. Although the summative evaluation can conclude after expiration of the grant, the funding agency will expect to receive the final report of the evaluation.

D. Timeline, Submission, and Selection

Assisted by an independent research agency under contract to Carnegie Corporation of New York a panel of expert external evaluators will advise funding agencies of institutions to be invited to submit proposals for *Teachers for a New Era*. Once an institution has submitted a proposal, evaluation will begin immediately. Acting with benefit of advice from the panel, negotiations will be undertaken with the submitting institution aimed at strengthening the proposal. The Corporation plans to make the first two awards by May 1, 2002. The same cycle will be repeated for the following two years, until six awards have been made. Other funding agencies will be making awards on differing schedules in accordance with their own procedures and requirements.

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Telephone: (212) 207-6277 FAX: (212) 758-6019

E-Mail Address: ELL@carnegie.org Date: 10/10/03

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